

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BRIDGESTONE SPORTS CO., LTD.,)	
and BRIDGESTONE GOLF, INC.,)	
)	
Plaintiffs,)	C. A. No. 05-132 (JJF)
)	
v.)	
)	PUBLIC VERSION
ACUSHNET COMPANY,)	
)	
Defendant.)	

**ACUSHNET'S BRIEF IN OPPOSITION TO
BRIDGESTONE'S MOTION FOR SUMMARY JUDGMENT
OF NON-INFRINGEMENT OF U.S. PATENT NO. 6,818,705**

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Defendant Acushnet Company ("Acushnet") files this Memorandum in Opposition to Bridgestone's Motion for Summary Judgment of Non-infringement of U.S. Patent No. 6,818,705 ("the '705 patent") (Ex. A).

I. NATURE AND STAGE OF PROCEEDINGS

This is a patent infringement suit involving eleven patents and scheduled for trial, starting June 18, 2007. A pre-trial conference will be held on May 25, 2007. Bridgestone alleges that Acushnet infringes seven patents-in-suit. Acushnet alleges that Bridgestone infringes four patents-in-suit, including the '705 patent that is the subject of Bridgestone's present motion. The Court held a *Markman* hearing on November 29, 2006, including as to the term "material" to be construed from the '705 patent, but has not yet issued a decision construing the asserted claims. Bridgestone filed its Motion for Summary Judgment of Non-Infringement of U.S. Patent No. 6,818,705 on April 13, 2007. (D.I. 346).

II. SUMMARY OF ARGUMENT

Bridgestone's request for summary judgment should be denied. Acushnet will show:

First, Bridgestone wrongly asserts that Acushnet should have tested finished golf balls. The '705 patent claims properties of the blend of polybutadiene and an organosulfur compound used to manufacture the accused golf balls. In Bridgestone's process, [REDACTED] Acushnet's proofs seek to establish infringement at this stage in the process and are permissible under its construction of the claims of the 705 patent.

Second, Bridgestone's argument is premised on the contention that Acushnet was required to test a blend of *all* of the materials present in the unfinished cores. However, the '705 patent claim is directed to properties of a blend of two specific materials – the uncured polybutadiene and the organosulfur compound, which is what Acushnet tested.

Given the language of the claim, the presence of additional materials in the cores of the accused golf balls is irrelevant.

Third, Bridgestone asserts that not all of the accused Bridgestone golf balls use the specific materials or amounts in the blends tested by Acushnet. However, the core recipe documents produced by Bridgestone show that all of the accused golf balls use the materials tested by Acushnet in amounts within the ranges tested by Acushnet. This evidence, if accepted by the jury, would support a verdict in favor of Acushnet. Hence, summary judgment of non-infringement is not appropriate.

III. STATEMENT OF FACTS

A. The '705 Patent

The '705 patent discloses a multilayered solid golf ball that has a center, an inner cover, and an outer cover that is made from a polyurethane composition. (Ex. A – '705 Pat., Col. 33, ll. 41-51). The only asserted claim is claim 4, which depends from claim 1. Claim 1 requires a center “comprising a material [formed] from the conversion reaction of *at least* a cis-to-trans catalyst and a polybutadiene, wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40.” (Ex. A – '705 Pat., Col. 33, ll. 43-47) (emphasis added).¹ Claim 4 adds the requirement that the cis-to-trans catalyst of claim 1 “comprises at least one of” a number of chemical compounds, including an organosulfur compound. (Ex. A – '705 Pat., Col. 33, ll. 59-64).

Polybutadiene rubber has been widely used by Acushnet and other golf ball manufacturers for many years to manufacture the center – or core – found in solid golf

¹ The parties agree that the term “farmed” is a typographical error for the term “formed.”

balls. Polybutadiene is a polymer made by polymerizing the monomer butadiene. (D.I. 346 at Ex. F, p. 4).²

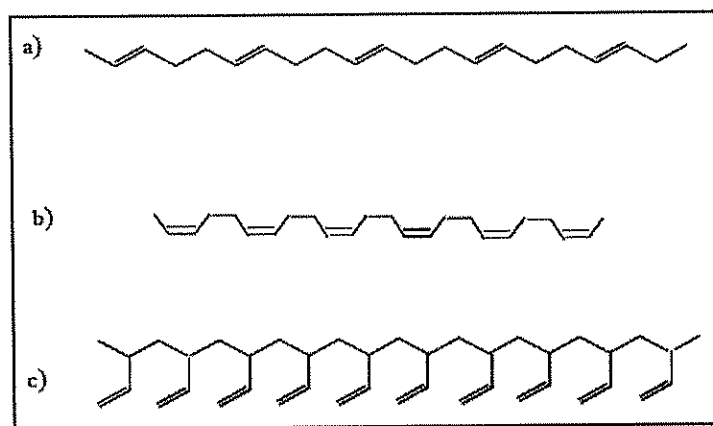
Polymerization is a chemical process by which short monomer molecules are joined together to form longer chains of molecules. (*Id.*). Typically, when butadiene is polymerized, the reaction makes combinations of three different types of polybutadiene. (*Id.*). These different types of polybutadiene are also known in chemical terms as different "isomers" of the polybutadiene. (*Id.*). When butadiene rubber is polymerized, the amount of each type of polybutadiene in the mixture depends on the polymerization conditions and the catalysts used. (*Id.*). The different types of polybutadiene have different molecular bonds, giving them different physical and chemical properties. (*Id.*). The three different types of polybutadiene are known as "1,4-cis polybutadiene," "1,4-trans polybutadiene," and "1,2 vinyl polybutadiene." (*Id.*). The chemical structure of the polybutadiene molecules is somewhat different depending on the isomer. (*Id.*).

The polymerization of butadiene can be thought of as linking a number of differently colored paper clips together. For example, red paper clips may represent cis-1,4 polybutadiene, blue paper clips may represent 1,4-trans polybutadiene and green paper clips may represent 1,2-vinyl polybutadiene. When the paper clips are linked together, all three color paper clips will be in the chain. The number of one color of paper clips in a chain of a certain length will depend on the particular catalyst and polymerization conditions. (*Id.* at 5). In creating a polybutadiene high in cis content, most of the clips will be red, while there will be very few green and blue paper clips in the chain. (*Id.*). These red, blue and green clips will be interspersed throughout the length of the chain and will not necessarily be in one location on the chain. (*Id.*). In one example, the high-cis polybutadiene chain may include 96% cis polybutadiene. (*Id.*). In this case, going back to the example, there may be 96 red clips, 3 blue clips and 1 green

² Butadiene is a polymerisable monomer also known as "1,3-butadiene." (*Id.*).

clip making up the chain. (*Id.*). While this example is not perfect in that it does not address the differences in chemical bonds and the resilience of the polymer, it supports the idea that the various cis, trans, and vinyl components are created throughout the polymer chain. (*Id.*).

Figure 1 below shows a graphical depiction of the polymer chains in the three different types of polybutadiene.



Configurations of polybutadiene: (a) 1,4-Trans, (b) 1,4-Cis and (c) 1,2-Vinyl.

Figure 1

Figure 1(a) shows the trans- isomer of polybutadiene. The double lines (=) in Figure 1(a) represent an additional carbon bond on opposite sides of the polymer chain. (*Id.* at 6). This is where the term “trans,” meaning “across,” comes from in the name “trans-polybutadiene.” (*Id.*).

Figure 1(b) shows the cis- isomer of polybutadiene. In Figure 1(b) the carbon double bonds are on the same side of the polymer chain. This is where the term “cis,” meaning “on the same side of,” comes from in the word “cis-polybutadiene.” (*Id.*)

Finally, Figure 1(c) shows the vinyl isomer of polybutadiene. There, a chain of carbon atoms have a number of double bonds extending off to one side of the chain. (*Id.*). This results in a polymerized polybutadiene containing a distribution of structures as shown below in Figure 2:

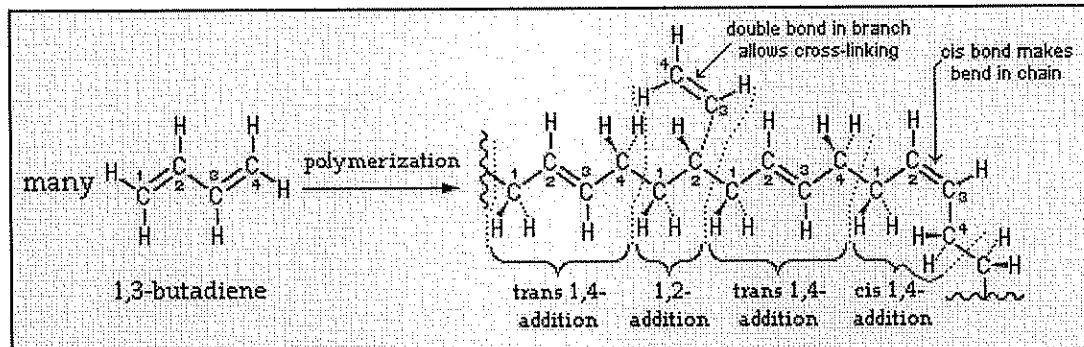


Figure 2

The three different types of polybutadiene have different physical and chemical properties. (*Id.*). One difference between the types of polybutadiene isomers is their resiliency. (*Id.*). The resiliency of the solid golf ball core contributes to the resiliency of the final ball. A golf ball that has high resiliency permits a higher percentage of energy transfer from the face of a golf club to the golf ball when struck, thereby giving the golf ball a higher initial velocity off the golf club and increasing its travel distance. (*Id.* at 6-7).

Golf ball manufacturers have typically used polybutadiene with a high cis-polybutadiene content in making solid core golf balls. (Ex. A – ‘705 Patent, Col. 1, ll. 56-67). According to the ‘705 patent, cores made from high cis-polybutadienes offered good resilience, but felt hard to golfers. (Ex. A – ‘705 Patent, Col. 2, ll. 1-8).

The ‘705 patent teaches that, in order to get both good resilience and soft feel, it is desirable to convert some of the cis-polybutadiene used in the golf ball core to the more resilient trans-polybutadiene using a cis-to-trans catalyst. (Ex. A – ‘705 Patent, Col. 11, l. 62 – Col. 12, l. 7). As described in the ‘705 patent, the cis-to-trans catalyst “will convert at least a portion of cis-polybutadiene isomer to trans-polybutadiene isomer.” (Ex. A – ‘705 Patent, Col. 8, l. 66 – Col. 9, l. 2). The cis-to-trans catalyst initiates the conversion of cis-polybutadiene to trans-polybutadiene by breaking the bonds of cis-isomer and allowing those bonds to reform as trans-isomer. Converting the cis-

polybutadiene to trans-polybutadiene in this manner can produce a core material with improved resiliency and a soft feel. (Ex. A – ‘705 Patent, Col. 8, l. 66 – Col. 9, l. 2).

The ‘705 patent describes a number of different compositions that can be used to convert cis-polybutadiene to trans-polybutadiene, including organosulfur compounds. (Ex. A – ‘705 Patent, Col. 12, l. 52 – Col. 13, l. 47). An organosulfur compound is a chemical compound containing carbon, hydrogen, and sulfur. Zinc salt of pentachlorothiophenol (“zinc PCTP”) is one example of such a compound. (Ex. B – ‘652 Patent, Col. 4, ll. 23-27) (“zinc salt of pentachlorothiophenol ... is a metal salt of an organic sulfur compound”).

The ‘705 patent relies on two claimed characteristics of the two blended ingredients in order to determine whether the blend (identified in the claim as the “material”) is suitable for use in a golf ball core – “molecular weight” and “resilience index.” The “molecular weight” of the material is the average molecular weight of a sample of the material. (Ex. A – ‘705 Patent, Col. 10, ll. 31-63). The molecular weight is derived by dissolving a sample of the material in a solution as set forth in the ‘705 patent and then using a specified detector to obtain the molecular weight number from the solution. (Ex. A – ‘705 Patent, Col. 10, ll. 31-63).

The term “resilience index” is a coined name for a detailed technical resilience measurement. (D.I. 346 at Ex. F, p. 8). The resilience index is obtained from an equation that requires two compression measurements, known as “loss tangent” measurements, be made of a sample – in this case, the blended material. (Ex. A – ‘705 Patent, Col. 11, ll. 13-26). The loss tangent of a sample is its ability to regain its shape after a succession of compressive loads, known as cycles. According to the ‘705 patent, one must take the loss tangent of the material at 10 cpm (“cycles per minute”) and at 1,000 cpm. (Ex. A – ‘705 Patent, Col. 11, ll. 13-26). The ‘705 patent provides the specific settings and even the specific machine – a dynamic mechanical analyzer known as an RPA 2000 – to measure the loss tangent. (Ex. A – ‘705 Patent, Col. 11, ll. 13-26). The two loss tangent

measurements are then inserted into the resilience index equation to provide the resilience index itself. (Ex. A – ‘705 Patent, Col. 11, ll. 13-26). A higher resilience index indicates a more resilient material, so that optimizing the resilience index of the core material can improve the ball’s rebound capacity, *i.e.*, the ball’s ability to convert the energy imparted by the golf club to kinetic energy, resulting in improved launch velocity and longer flight distance. (D.I. 346 at Ex. F, p. 8-9).

B. The Accused Bridgestone Products

Acushnet has accused the Bridgestone Golf Tour B330, Precept U-Tri Extra Spin, Precept U-Tri Extra Distance, Nike One Gold, Nike One TW, Nike One Platinum, and Nike One Black golf balls of infringing claim 4 of the ‘705 patent. Bridgestone launched the B330 on December 1, 2004, and the Precept U-Tri Extra Spin and Precept U-Tri Extra Distance on or about September 1, 2002. Bridgestone launched the Nike One TW on June 19, 2003, the Nike One Gold on July 29, 2004, and the accused versions of the Nike One Black and Nike One Platinum golf balls on February 1, 2006.

IV. ARGUMENT

A. Legal Standards

Pursuant to Federal Rule of Civil Procedure 56(c), a party is entitled to summary judgment if a court determines from its examination of “the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any,” that there are no genuine issues of material fact and that the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). In determining whether there is a genuine issue of material fact, a court must review the evidence and construe all inferences in the light most favorable to the non-moving party. *See Goodman v. Mead Johnson & Co.*, 534 F.2d 566, 573 (3d Cir. 1976).

B. Acushnet Properly Tested the Blend of an Uncured Polybutadiene with an Organosulfur in a Range Disclosed in Bridgestone's Recipes.

Under Acushnet's proposed claim construction, the "material" claimed by the '705 patent is a blend of an uncured polybutadiene and an organosulfur, "wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40." (D.I. 346 at Ex. F, pp. 9-11). According to the Bridgestone core recipe documents cited by Dr. Koenig in his report, the cores of each of the accused Bridgestone golf balls use [REDACTED]

[REDACTED] (D.I. 346 at Ex. F, p. 10).

Because the accused Bridgestone products use different ratios of [REDACTED], Dr. Koenig directed Acushnet employees to prepare two samples, one combining [REDACTED], a range that encompasses the amounts shown in Bridgestone's core recipe documents. (*Id.* at p. 11).

[REDACTED]

Bridgestone's motion points to a number of facts that, if anything, show that disputes exist requiring a trial. For example, [REDACTED]

[REDACTED] (D.I. 346 at Ex. E, ¶ 17).

Nor does Acushnet claim they do. Rather, Dr. Koenig stated only that those two amounts “*encompass*” the amounts” shown in Bridgestone’s core recipe documents. (D.I. 346 at Ex. F, p. 11). Bridgestone has offered no evidence to contradict Dr. Koenig’s conclusion.

Bridgestone further states

[REDACTED]

Thus, at most, that statement raises a question of fact that renders Bridgestone’s motion inappropriate for summary judgment.

[REDACTED]

Thus, even if credited, Mr. Shindo’s unsupported declaration merely establishes a question of material fact, rendering this question inappropriate for determination by summary judgment.

For example,

[REDACTED]

C. The Presence of Additional Materials In the Cores of the Accused Golf Balls Is Irrelevant Under Acushnet's Claim Construction.

Nor does the presence of additional materials in the cores of the accused Bridgestone golf balls support Bridgestone's motion. Claim 1 of the '705 patent requires a center "**comprising** a material [formed] from the conversion reaction of at least a cis-to-trans catalyst and a polybutadiene, wherein the material has a molecular weight of greater than about 200,000 and a resilience index of at least about 40." (Ex. A – '705 Pat., Col. 33, ll. 43-47) (emphasis added). The claim's use of the terms "comprising" indicates that the center – also known as a core – may include ingredients other than the claimed material.

The term "comprising" is a term of art that is open-ended. *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997) ("‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim."). *See also Schering Corp. v. Amgen Inc.*, 18 F. Supp. 2d 372, 382 (D. Del. 1998) ("‘Comprising’ indicates the claim is open and additional elements not recited can be covered by the claim"). Thus, while the claim is directed to a material made from the blend of two specific ingredients, the use of "comprising" allows the golf ball core to include ingredients in addition to the claimed material.

Even absent the term "comprising," Bridgestone's argument is incorrect as a matter of law. "The presence of additional elements is irrelevant if all the claimed elements are present in the accused structure." *Mannesman Demag Corp. v. Engineered Metal Prods.*, 793 F.2d 1279, 1282-83 (Fed. Cir. 1986) (citing *A. B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 703 (Fed. Cir. 1983)). *See also Astrazenca AB v. Mutual Pharm. Co.*, 250 F. Supp. 2d 506, 515 (E.D. Pa. 2003) ("Thus, an accused formulation will meet this claim element even though the alleged infringer has also added to the accused formulation some extra ingredients, such as PVP or a volatile solvent like

ethanol.”) Here, the claimed element is the blend of an uncured polybutadiene with an organosulfur, said blend having a molecular weight of at least 200,000 and a resilience index of at least about 40. (Ex. A – ‘705 Pat., Col. 33, ll. 43-47). The use of additional ingredients to form the core, including any additional polybutadienes, is irrelevant as a matter of law.

V. CONCLUSION

For the foregoing reasons, Acushnet respectfully requests that the Court deny Bridgestone’s motion.

Respectfully submitted,

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